

MULTIMODAL & PUBLIC SPACE

Design Guidelines

VIRGINIA DEPARTMENT OF RAIL
AND PUBLIC TRANSPORTATION



MAY 23, 2012

STEERING COMMITTEE MEETING

WELCOME!



LAST
STEERING
COMMITTEE
MEETING
RICHMOND,
FEBRUARY
27, 2012



AGENDA

- Status Report – where are we?
- Ride the Tide – looking at TOD
- Working Lunch
- Presentations – J.D. Bondurant & Amanda Lutke

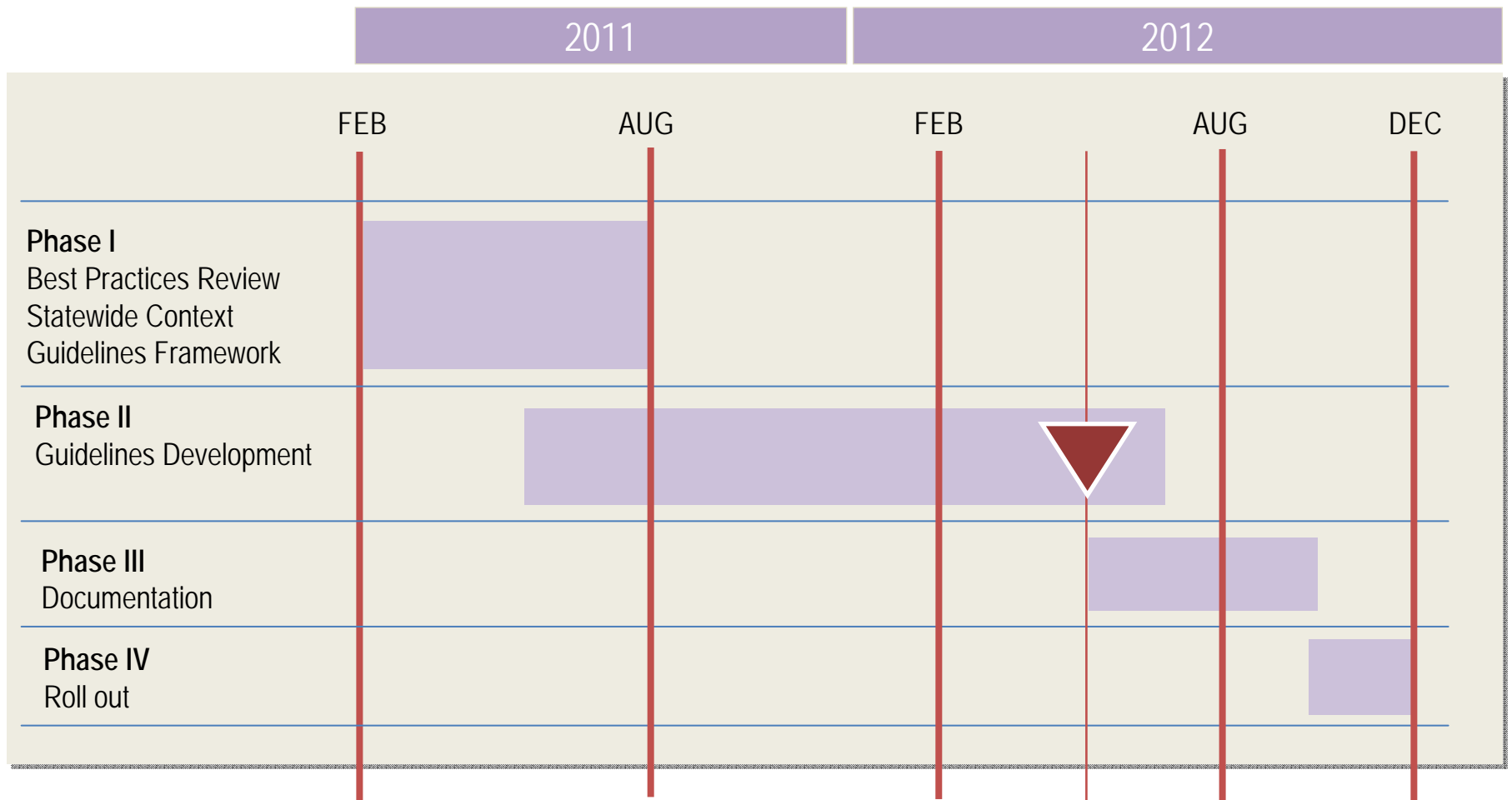
TODAY'S THEME

Planning for Multimodal Centers:

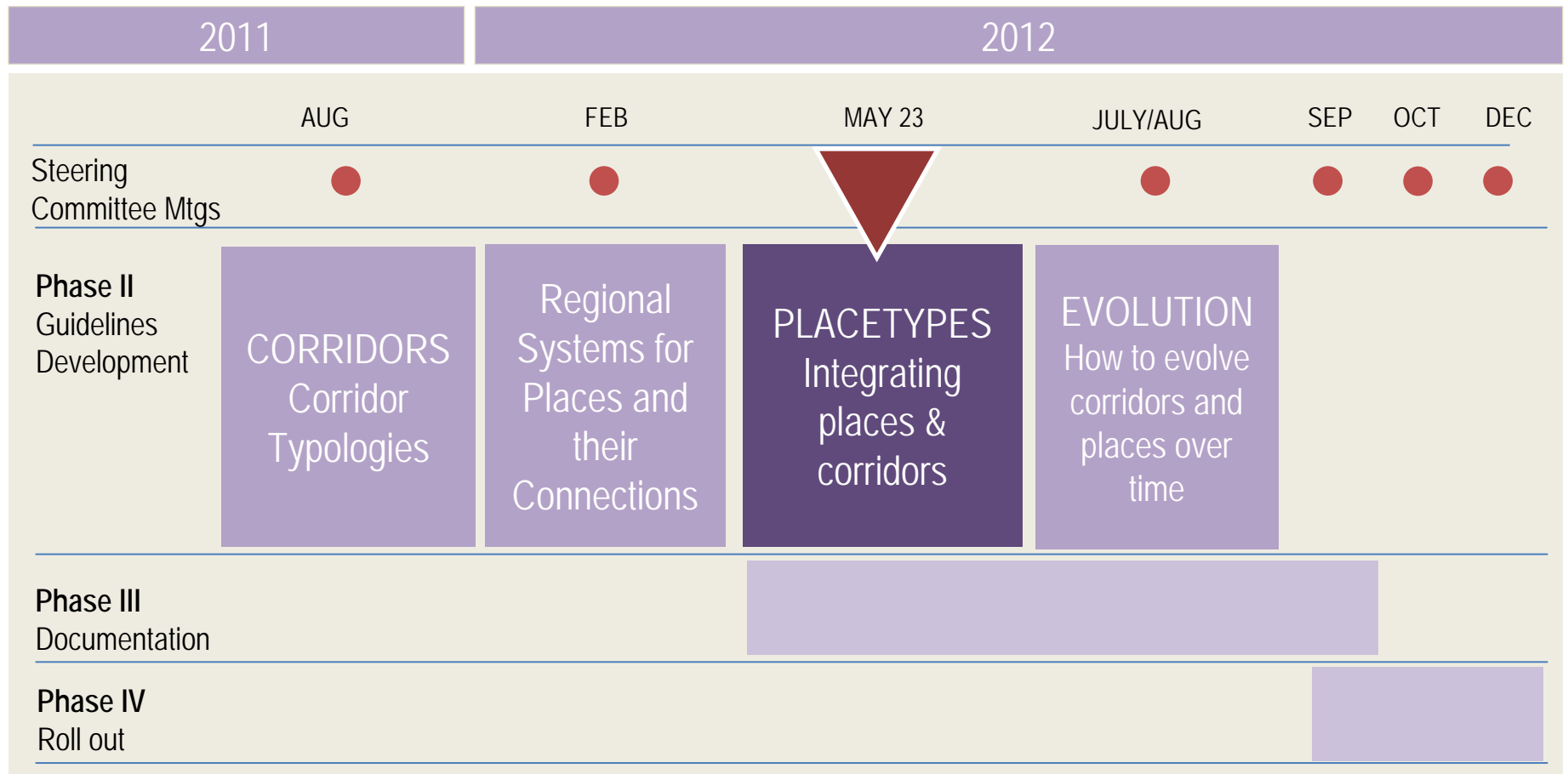
- How do we make places more multimodal?



PROJECT STATUS



STEERING COMMITTEE MEETINGS



PROJECT GOALS

- Create a statewide resource for planners, transit professionals, elected officials and the public
- Identify integrated land use, transportation and urban design approaches to support multimodal mobility
- Describe the benefits of multimodal planning in terms of cost efficiency, economic development and quality of life

Affirmed at
last Steering
Committee
Meeting



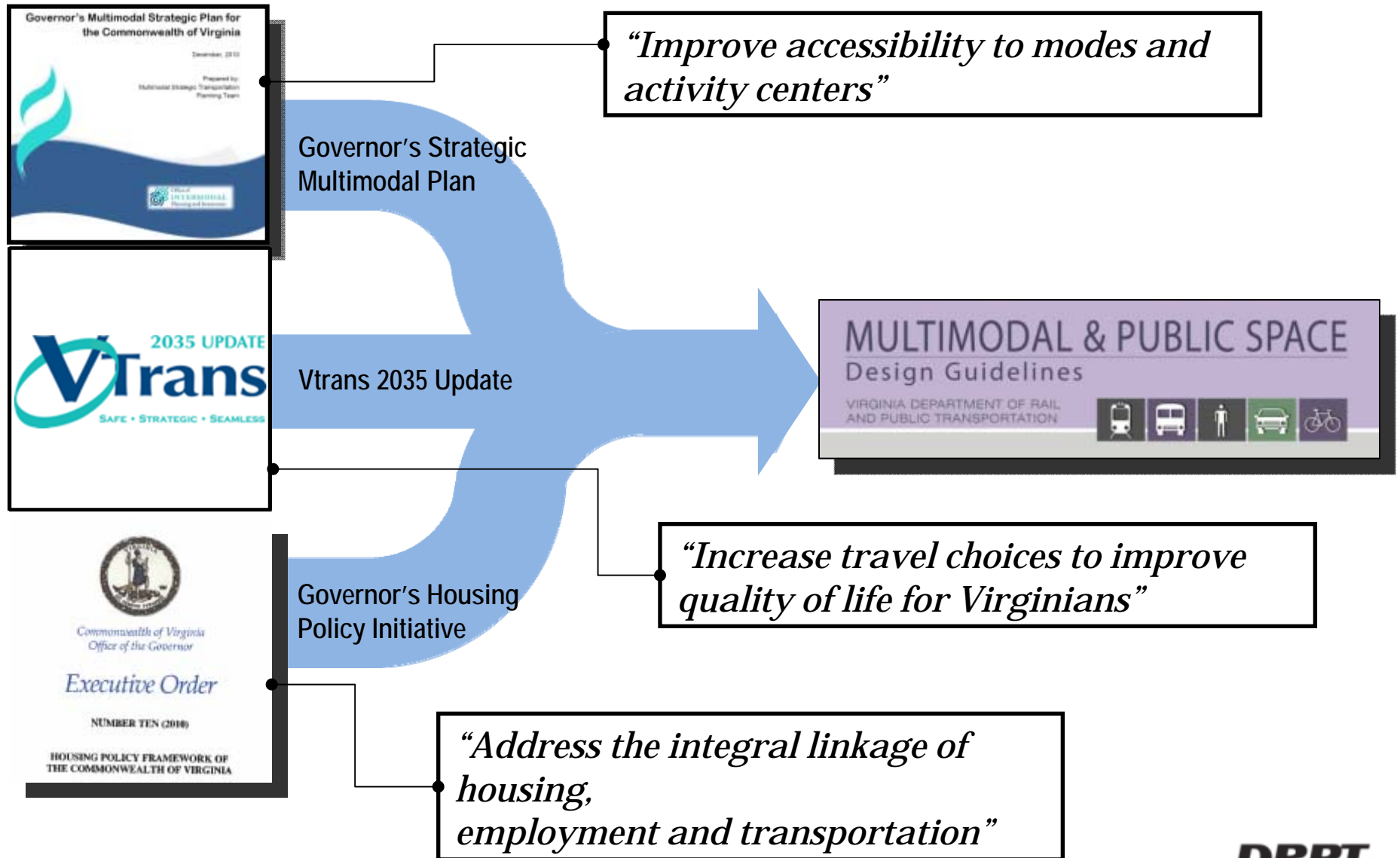
WHAT ARE SOME OF THE BENEFITS OF MULTIMODAL PLANNING?

- Cost-efficient use of public dollars
- Energy conservation
- More transportation choices
- Mobility and Opportunity Equity
- Public Health
- Economic Vitality
- Reduced Congestion
- Quality of Life

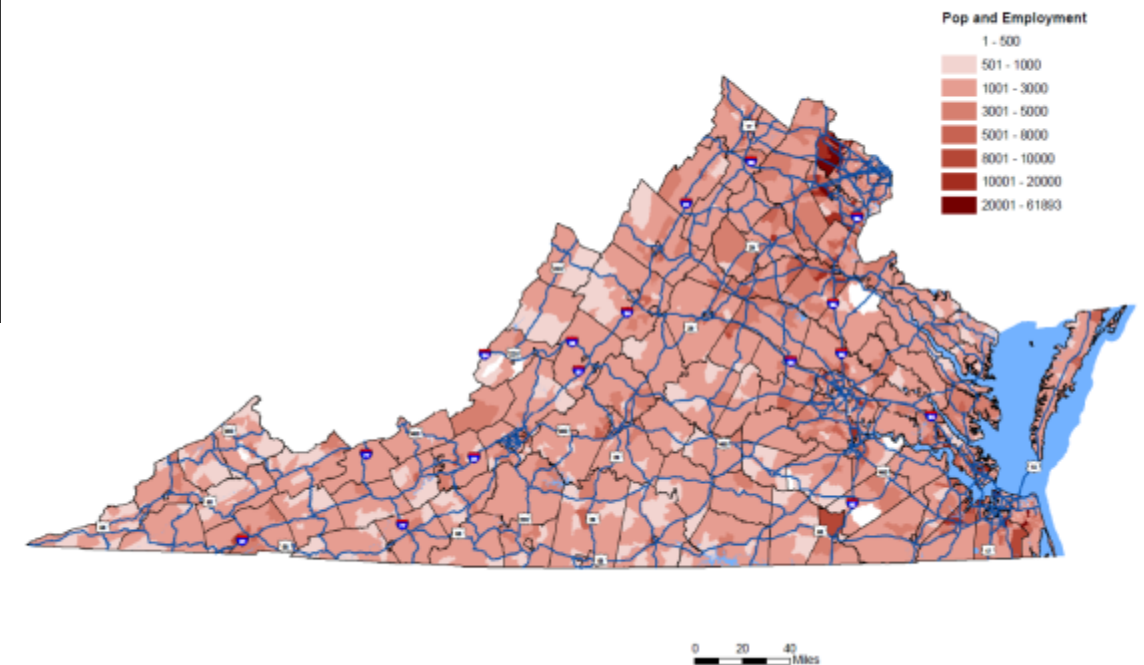
Discussed at
last Steering
Committee
Meeting



PROJECT LINKAGES

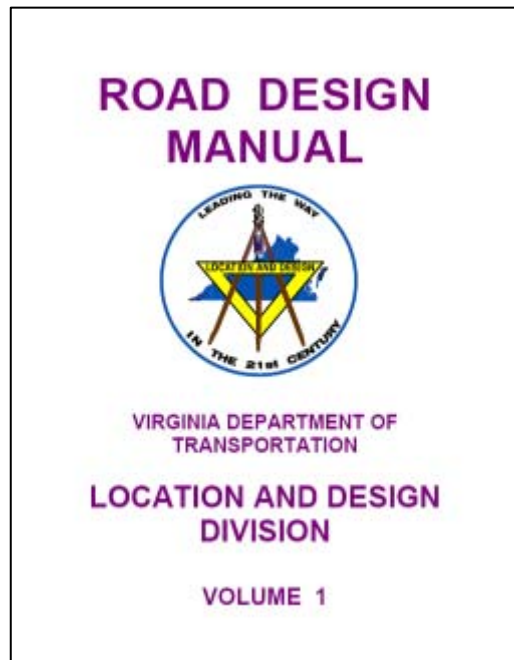


STATEWIDE CONTEXT

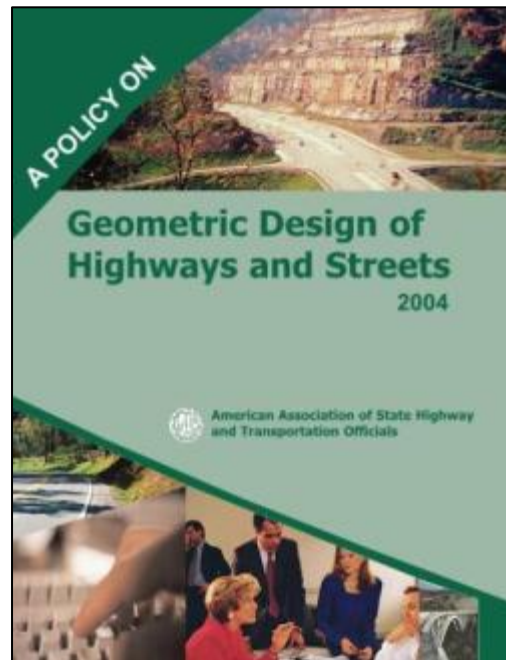


INDUSTRY STANDARDS

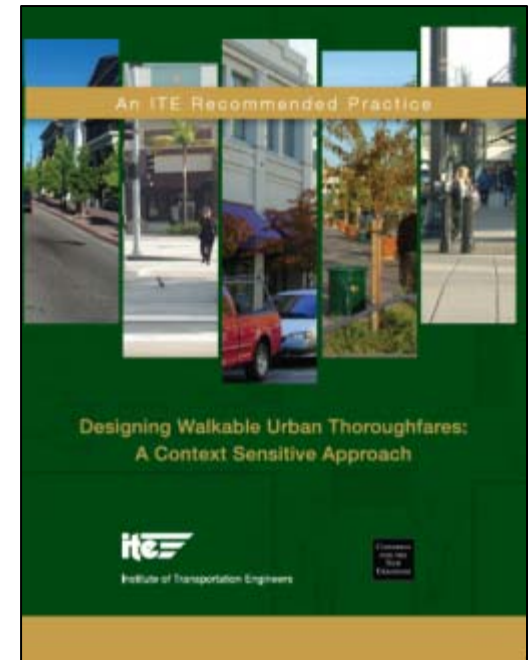
- Extensive research and use of (Virginia and National) industry standards



VDOT



AASHTO



ITE & CNU

GUIDELINES CONTENTS

- How to plan for Multimodal:
 - Regions
 - Centers
 - Corridors
 - Intersections
- Travel Demand Management
- TOD and Transit Corridors
- “Evolving” MM Centers & Corridors over time
- Implementation

What is a Multimodal Center?

Multimodal Centers are the walkable/bikable centers of each Multimodal District – they are defined by their travelsheds and their land use intensity.

re Multimodal District.

sdal district and define the future s that has good multimodal street network, a multimodal center is

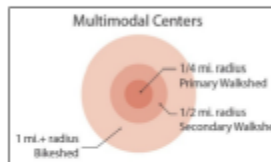


Figure 10 Diagram of Travelsheds in a Multimodal Center

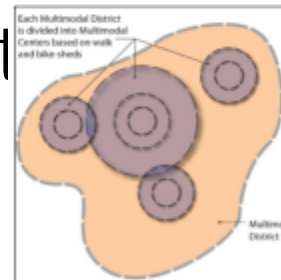


Figure 11 The difference between Multimodal Districts and Centers

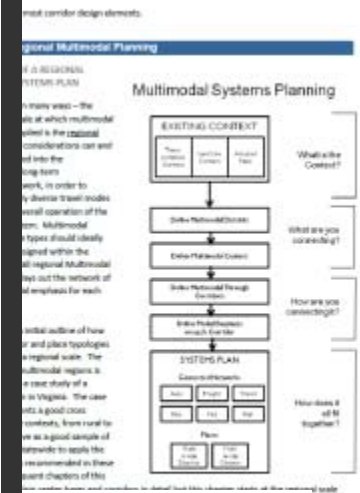


Figure 12 Through Corridors are mobility primary corridors that connect all the



Figure 13 Original Multimodal Through Corridor in Cambridge, MA

The first step in developing a multimodal systems plan is to identify the system of **Modal Emphases** on each Through Corridor. **Modal emphasis** is different from **modal priority**. **Modal priority** on a corridor generally means that it is primarily designed for a single travel mode – such as auto-oriented or transit-oriented. **Modal emphasis** recognizes that corridors can have multiple modal needs and that the corridor can be designed to balance multiple modes, with certain modes having greater emphasis than others in the detailed design of elements of the corridor. For example, most transit corridors are also dependent on being very accessible to pedestrians and bike trips as the primary transfer modes for transit. For this reason, the term **modal “emphasis”** is more appropriate than modal “priority.” The map below shows the modal emphasis for each

PLACETYPES:

MULTIMODAL CENTERS

MULTIMODAL REGIONS

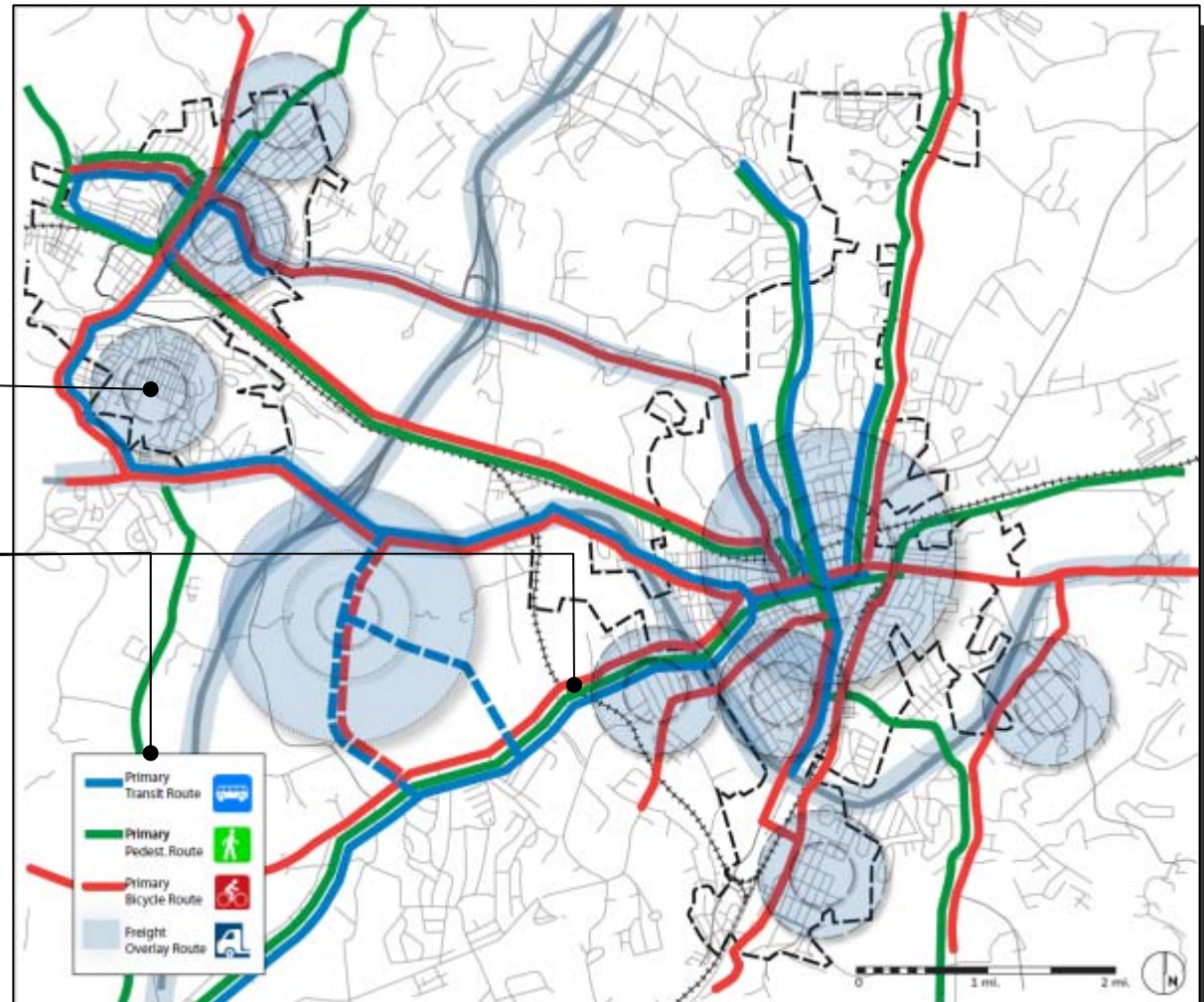
Example of a Multimodal Systems Plan



Multimodal
Centers



Multimodal
Corridors
(with "Modal
Emphasis")



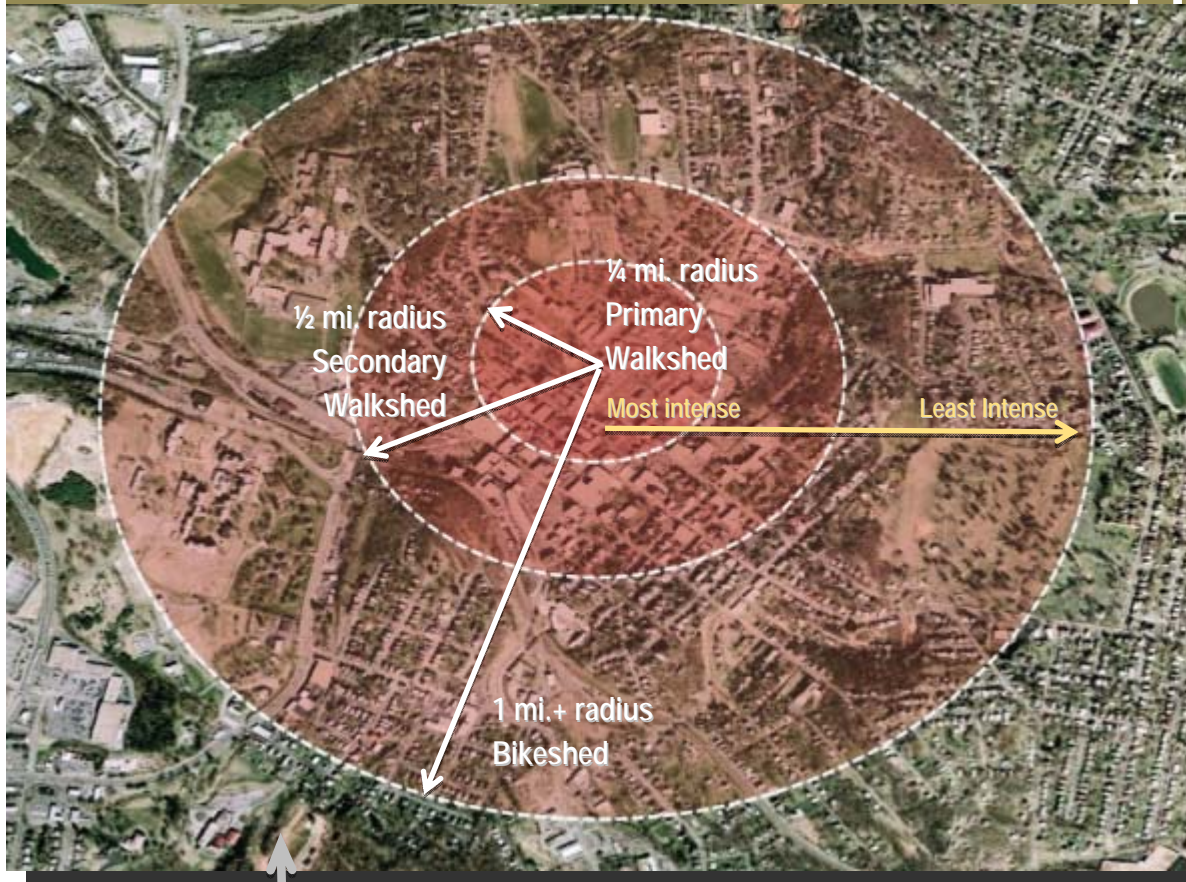
PLACE TYPES & MULTIMODAL CENTERS

- Place Types are used in many kinds of planning – regional planning, transit/TOD planning, corridor plans...
- Each project has its own way of categorizing place types based on the local context
- The place types used in these Guidelines are called "Multimodal Centers"
- They have been developed based on real Virginia places for the purpose of describing how to build Multimodal centers and corridors



Potential Multimodal Centers in portion of Hampton Roads

MULTIMODAL CENTERS - TRAVELSHEDS



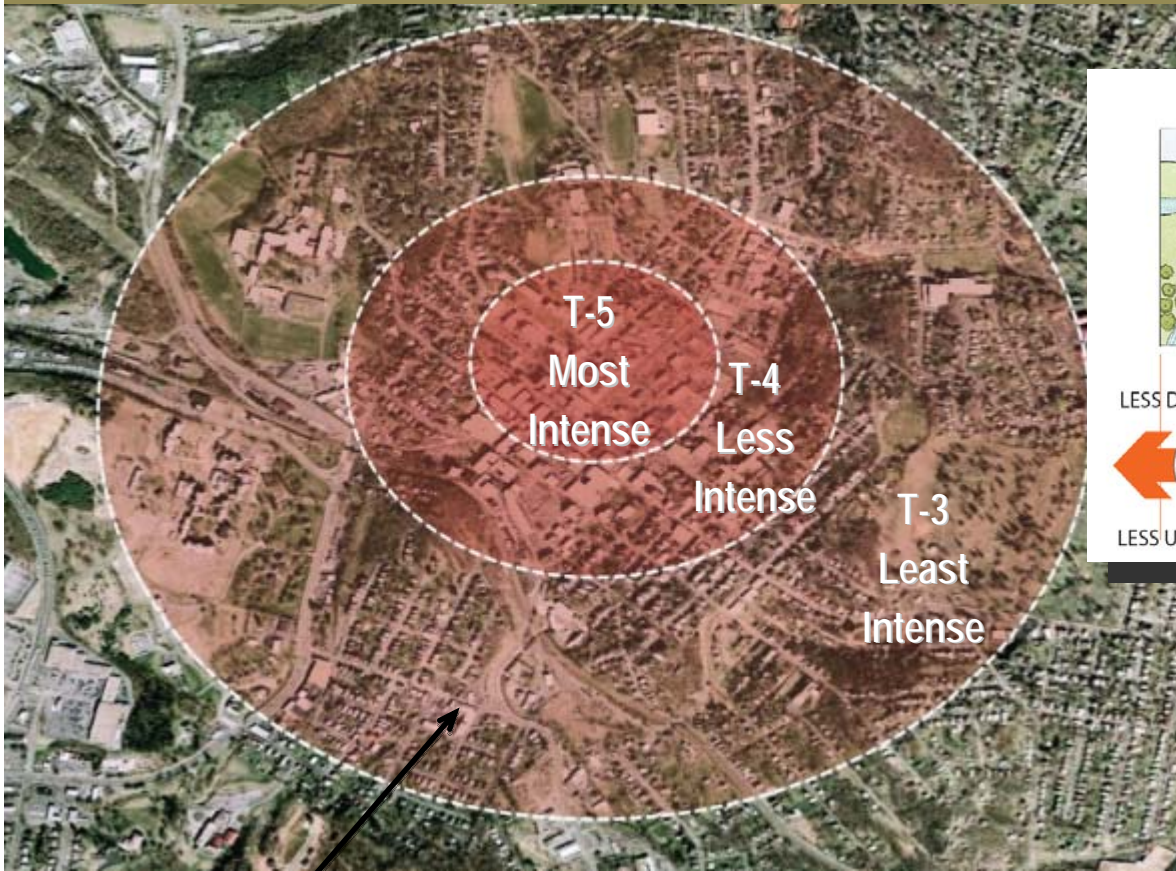
Multimodal Centers are based on Travelsheds by travel mode

They reflect a gradient of density from center to edge



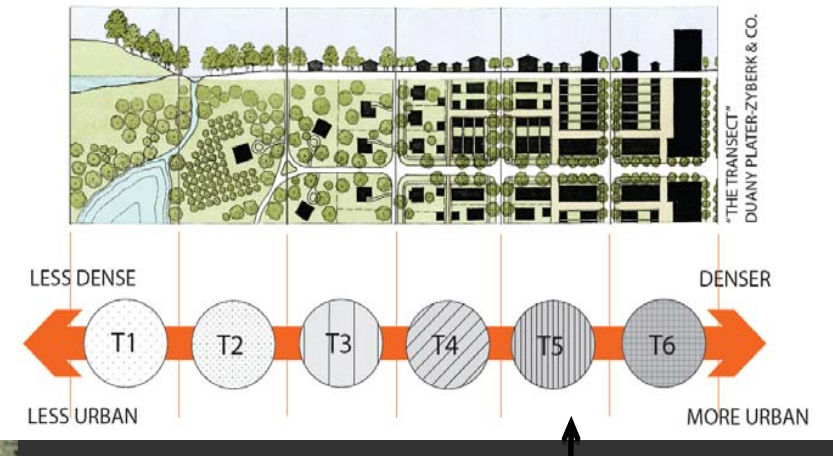
Each Multimodal Center can be described with a "prototype" diagram that shows the basic intensities and arrangement of corridors

MULTIMODAL CENTERS – DEVELOPMENT INTENSITY



The Travelsheds also define intensity of development from center to edge in each Multimodal Center

TRANSECT "T" ZONES

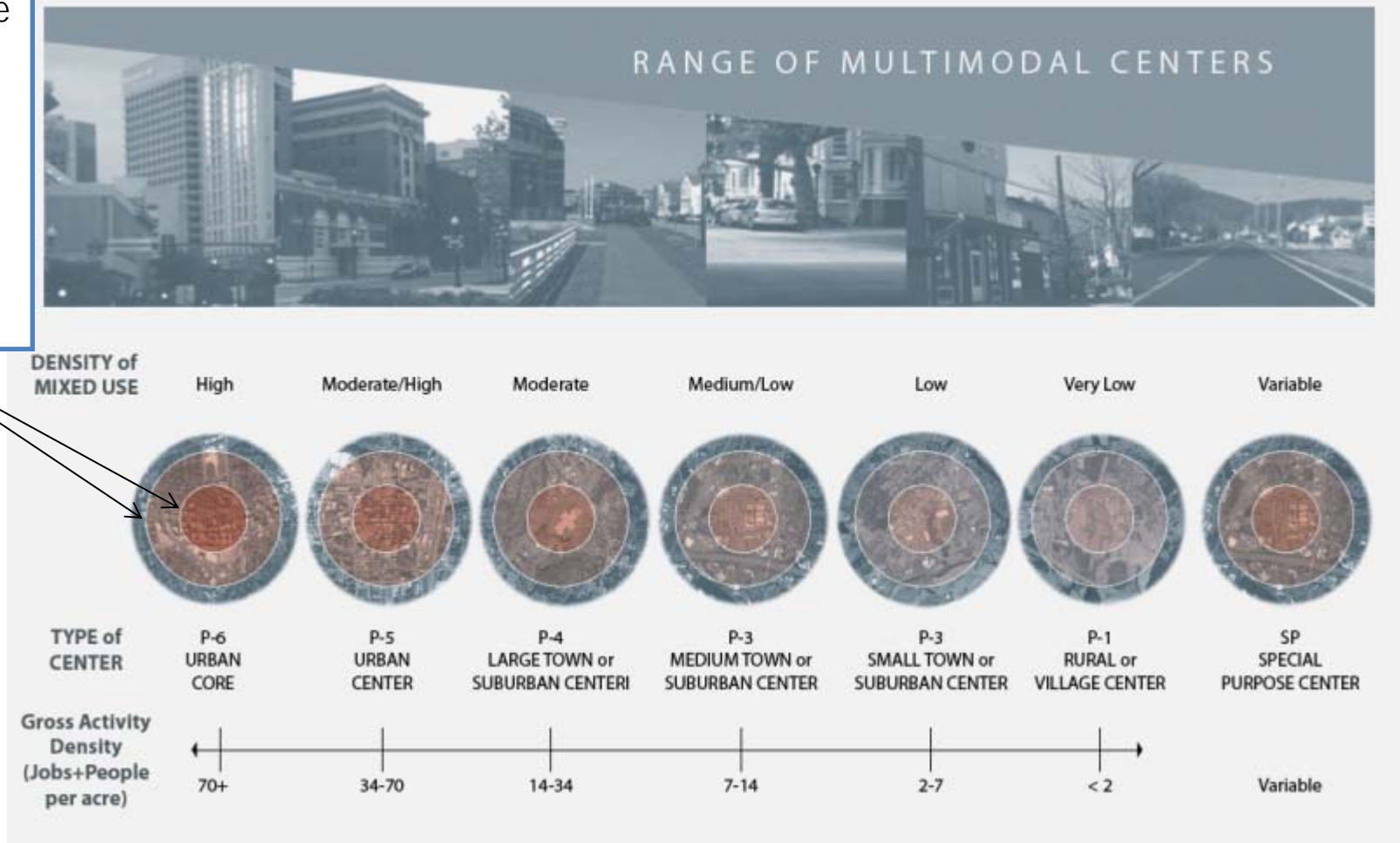


TRANSECT ZONE INTENSITY			
Transect Zone	Activity Density (Jobs + people/acre)	Gross Development FAR (residential + non-residential)	Net Development FAR (residential + non-residential)
T1	1 or less	0.01 or less	0.02 or less
T2	1 to 10	0.01 to 0.15	0.02 to 0.23
T3	10 to 25	0.15 to 0.37	0.23 to 0.57
T4	25 to 60	0.37 to 0.9	0.57 to 1.38
T5	60 to 100	0.9 to 1.49	1.38 to 2.3
T6	100 or more	1.49 or more	2.3 or more

The TRANSECT is a standard way of defining INTENSITY of places. There are 6 TRANSECT ZONES used in these guidelines to define the intensity of Multimodal Centers

MULTIMODAL CENTER TYPES

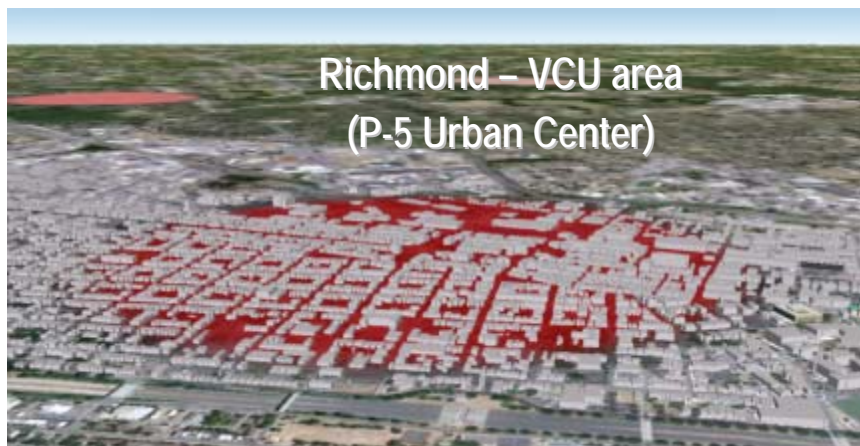
Each Center Type has different densities in the core and edges, based on TRANSECT ZONES



There are 7 types of Multimodal Centers based on different intensities from rural to urban

MULTIMODAL CENTERS

We analyzed one-mile circles for a variety of places throughout the State



The Multimodal Center Types were developed by analyzing real centers throughout Virginia

MULTIMODAL CENTER INTENSITIES



MULTIMODAL CENTER INTENSITY			
Center Type	Activity Density (Jobs + people/acre)	Gross Development FAR (residential + non-residential)	Net Development FAR (residential + non-residential)
P1 Rural or Village Center	2 or less	0.03 or less	0.05 or less
P2 Small Town or Suburban Center	2 to 6	0.03 to 0.10	0.05 to 0.15
P3 Medium Town or Suburban Center	6 to 14	0.10 to 0.21	0.15 to 0.3
P4 Large Town or Suburban Center	14 to 34	0.21 to 0.5	0.3 to 0.8
P5 Urban Center	34 to 70	0.5 to 1.0	0.8 to 1.6
P6 Urban Core	70 or more	1.0 or more	1.6 or more



Examples of Intensity of two Multimodal Center Types in Virginia

EXISTING CENTERS IN VIRGINIA

One mile circles were placed over a variety of places in Virginia and population/employment totals were calculated within each circle.

The scores show how the places can be organized by their Center Types

Activity Center (1-mile wide circle)	Total Population + Employment (Activity Units)	Activity Units/Acre	Multimodal Center Type
Tysons Corner	50,910	101	P6 Urban Core
Ballston	42,104	84	
Rosslyn	41,073	82	
Crystal City	37,081	74	
Alexandria	25,076	50	P5 Urban Center
Clarendon	23,829	47	
Richmond	23,502	47	
Winchester	9,514	19	P4 Large Town or Suburban Center
Danville	6,802	14	
Newport News	5,582	11	
Bristol	5,278	11	
Christiansburg	4,641	9	P3 Medium Town or Suburban Center
Marion	4,360	9	
Radford	4,351	9	
Oakton	3,733	7	
Dunn Loring	3236	6	P2 Small Town or Suburban Center
Glen Allen	1,685	3	
Bluefield	1,156	2	
Poquoson	583	1	
Mechanicsburg	42	0.08	P1 Rural or Village Center
Jeffersonton	25	0.05	
Williamsville	10	0.02	

DRPT TRANSIT SERVICE GUIDELINES

Place Type Key	Description	Supported Transit Technology (6)
P-1	Rural Center	Demand Response
P-2	Small Village Center	Demand Response
P-3	Small Town/Village Center	Fixed Route Bus
P-4	Suburban/Town Center	Express Bus
P-5	Urban Center	BRT/LRT
P-6	Urban Core	LRT/Rail

Development Levels Supportive of Fixed Route Bus

Measure	Development Level
Population densities (persons per square mile)	2,500 - 4,000
Employment Served (per acre)	4 - 5
Commercial floor to area ratio (FAR)	0.35 - 1.0
Residential dwelling units per acre	4 - 5

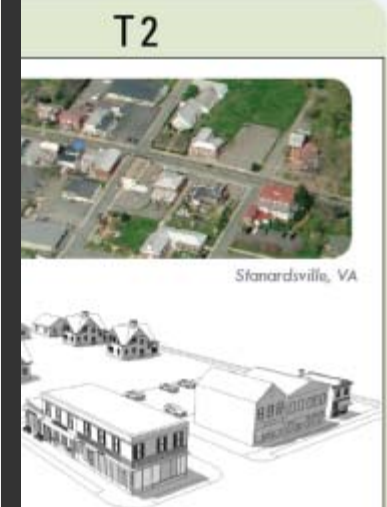
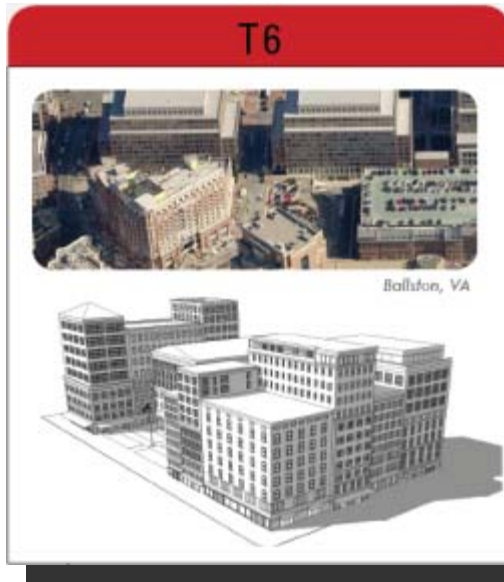
DRPT's Transit Service Guidelines were used to develop the Transit Supportiveness of each Multimodal Center Type

Development Levels Supportive of Rail

	Development Level
Population densities (persons per square mile)	6,667 - 15,000
Employment Served (per acre)	125,000 - 250,000
Commercial floor to area ratio (FAR)*	6.0 - 10.0
Commercial floor to area ratio (FAR)	1.0 - 2.5
Residential dwelling units per acre	10 - 25

MULTIMODAL CENTERS

■ Detailed descriptions of Density:



TRANSECT	T6
MIXED USE INTENSITY	High
ACTIVITY DENSITY (jobs + HH/ac)	100+/ac
AVG. BLDG. HEIGHT	8+ Stories
TYPICAL MAX BLDG. HEIGHT	20+ Stories
TYPICAL NET FAR	2.3+
TYPICAL NET RESIDENTIAL DENSITY	
SUPPORTED TRANSIT TECHNOLOGY	LRT/Rail

TRANSECT	T5
MIXED USE INTENSITY	Moderate/High
ACTIVITY DENSITY (jobs + HH/ac)	60/ac-100/ac
AVG. BLDG. HEIGHT	5-8 Stories
TYPICAL MAX BLDG. HEIGHT	12 Stories
TYPICAL NET FAR	1.38 - 2.30
TYPICAL NET RESIDENTIAL DENSITY	
SUPPORTED TRANSIT TECHNOLOGY	BRT/LRT

TRANSECT	T4
MIXED USE INTENSITY	Moderate
ACTIVITY DENSITY (jobs + HH/ac)	25/ac-60/ac
AVG. BLDG. HEIGHT	3-5 Stories
TYPICAL MAX BLDG. HEIGHT	8 Stories
TYPICAL NET FAR	0.57-1.38
TYPICAL NET RESIDENTIAL DENSITY	
SUPPORTED TRANSIT TECHNOLOGY	Express Bus

TRANSECT	T3
MIXED USE INTENSITY	Medium-Low
ACTIVITY DENSITY (jobs + HH/ac)	10/ac-25/ac
AVG. BLDG. HEIGHT	2-4 Stories
TYPICAL MAX BLDG. HEIGHT	5 Stories
TYPICAL NET FAR	0.23-0.57
TYPICAL NET RESIDENTIAL DENSITY	
SUPPORTED TRANSIT TECHNOLOGY	Fixed Route Bus

TRANSECT	T2
MIXED USE INTENSITY	Low
ACTIVITY DENSITY (jobs + HH/ac)	1/ac-10/ac
AVG. BLDG. HEIGHT	1-2 Stories
TYPICAL MAX BLDG. HEIGHT	3 Stories
TYPICAL NET FAR	0.02-0.23
TYPICAL NET RESIDENTIAL DENSITY	
SUPPORTED TRANSIT TECHNOLOGY	Demand Response

PLACE TYPOLOGY

4. Small Town/Village Center:

P4

28



SAMPLE P4 TOWN CENTER - LYNCHBURG, VA

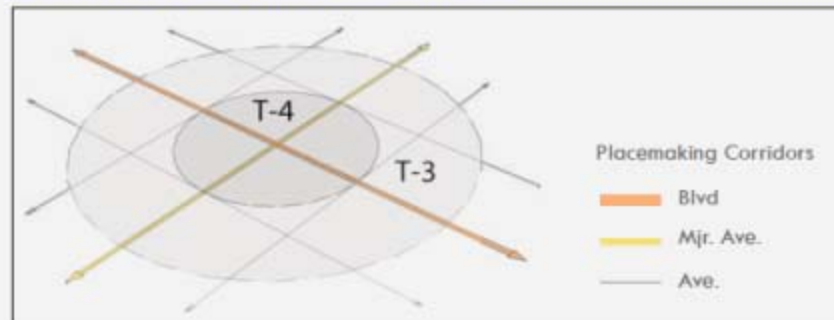


SAMPLE P4 TOWN CENTER - LYNCHBURG, VA

Table of Characteristics

Size of Buildings	Ranges from 2-5 stories average in the center to 2-3 stories at the outer edge.
Range of Uses	Medium density mixed use buildings with retail or office on the first floor and office or residential on upper floors. Apartments, townhouses, single family houses, civic, cultural, government and entertainment buildings/uses are also present.
Transportation	Balanced travel among automobile, local bus, bicycling, and walking modes.
Typical Location	Located at or near the intersection of a Boulevard and an Avenue
Parking Characteristics/types	A mixture of on-street parking and structured parking located behind the building, internal to the block, or underground, and off-street surface parking to the side and rear of buildings.

Prototype Arrangement of Corridors



These pages will describe each Multimodal Centers Type in terms of: Intensity, building heights, transit supportiveness – include examples of real places in Virginia

GROUP

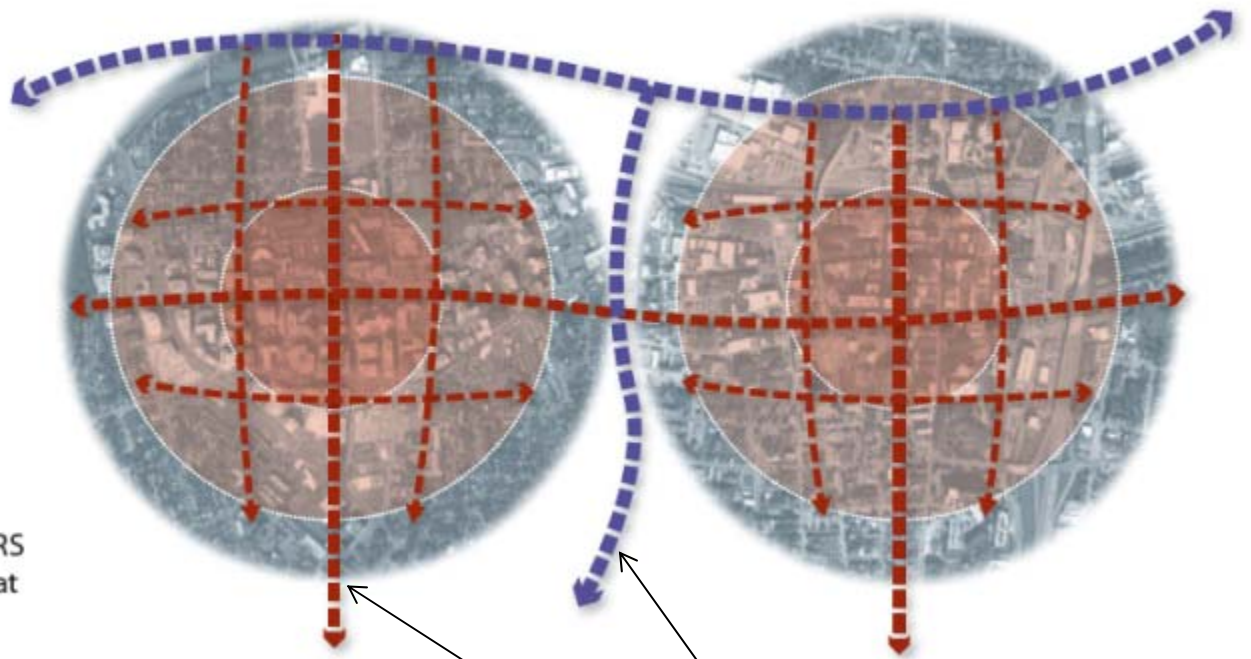
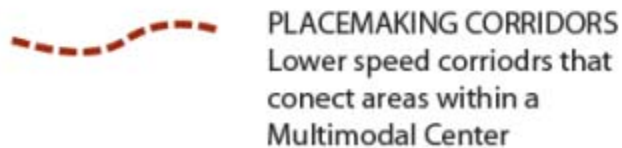
SAMPLE PAGE FROM GUIDELINES

MULTIMODAL CENTERS & CORRIDORS

Multimodal Centers



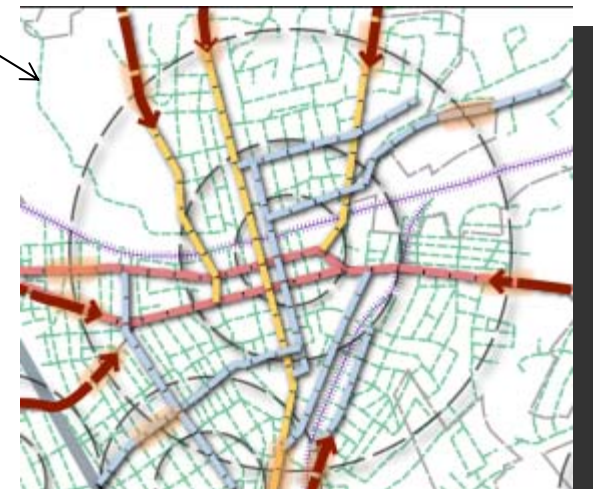
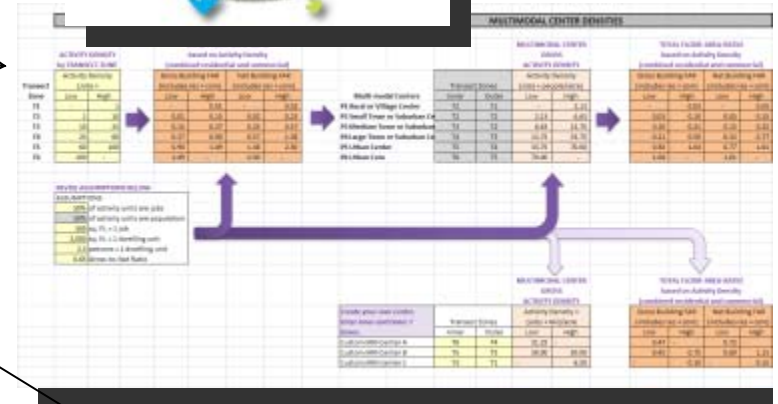
Multimodal Corridors



Through Corridors connect
Multimodal Centers
Placemaking Corridors connect
areas within a Multimodal Center

PLANNING FOR MULTIMODAL CENTERS

- The Multimodal Center Types provide a useful framework for analyzing existing centers and designing future ones
- A spreadsheet tool shows the details of each center type and allows new types to be assembled using Transect Zones
- The Center types are also used in designing Multimodal Corridors



PLACETYPES:

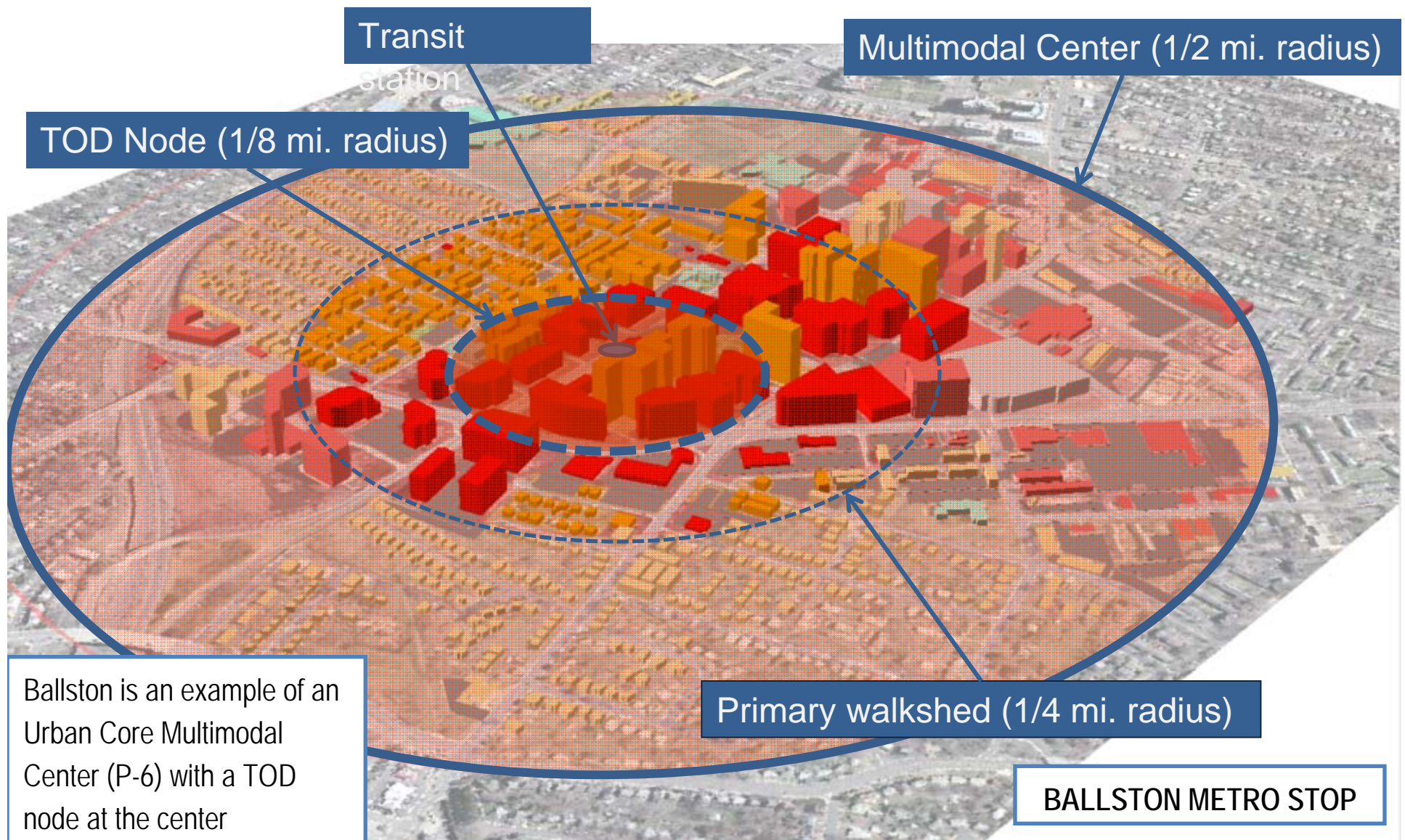
TOD NODES

WHAT IS TOD?

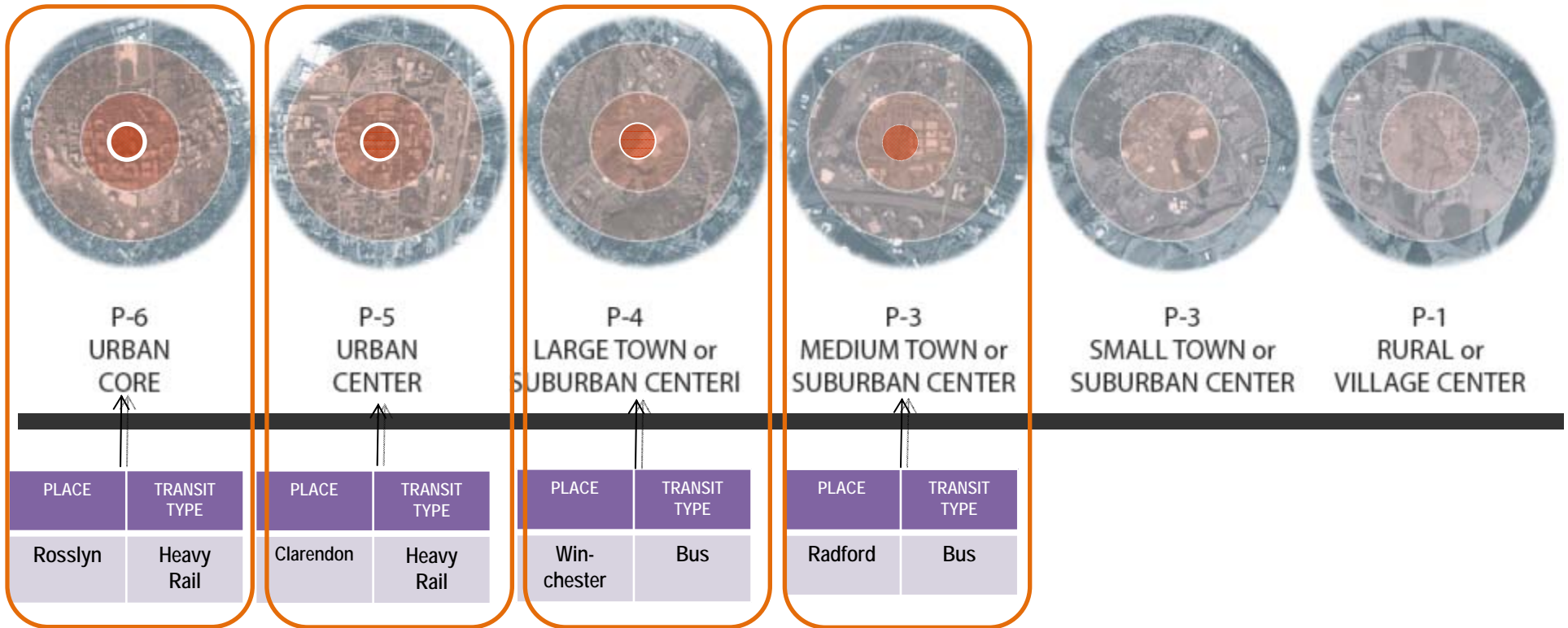
- TOD is an integrated center of dense development and walkable streets around a major transit stop
- Key TOD principles:
 - High Density
 - High quality walkable environment
 - Mix of uses
 - Well defined Center
- How does TOD differ from a Multimodal center?
 - It doesn't – TOD is an "overlay" for some types of MM Centers.
 - All TODs should be within MM Centers
 - The higher density MM Centers (P3 to P-6) can be TODs if they have high capacity transit stops in their centers



WHAT IS A TOD NODE?



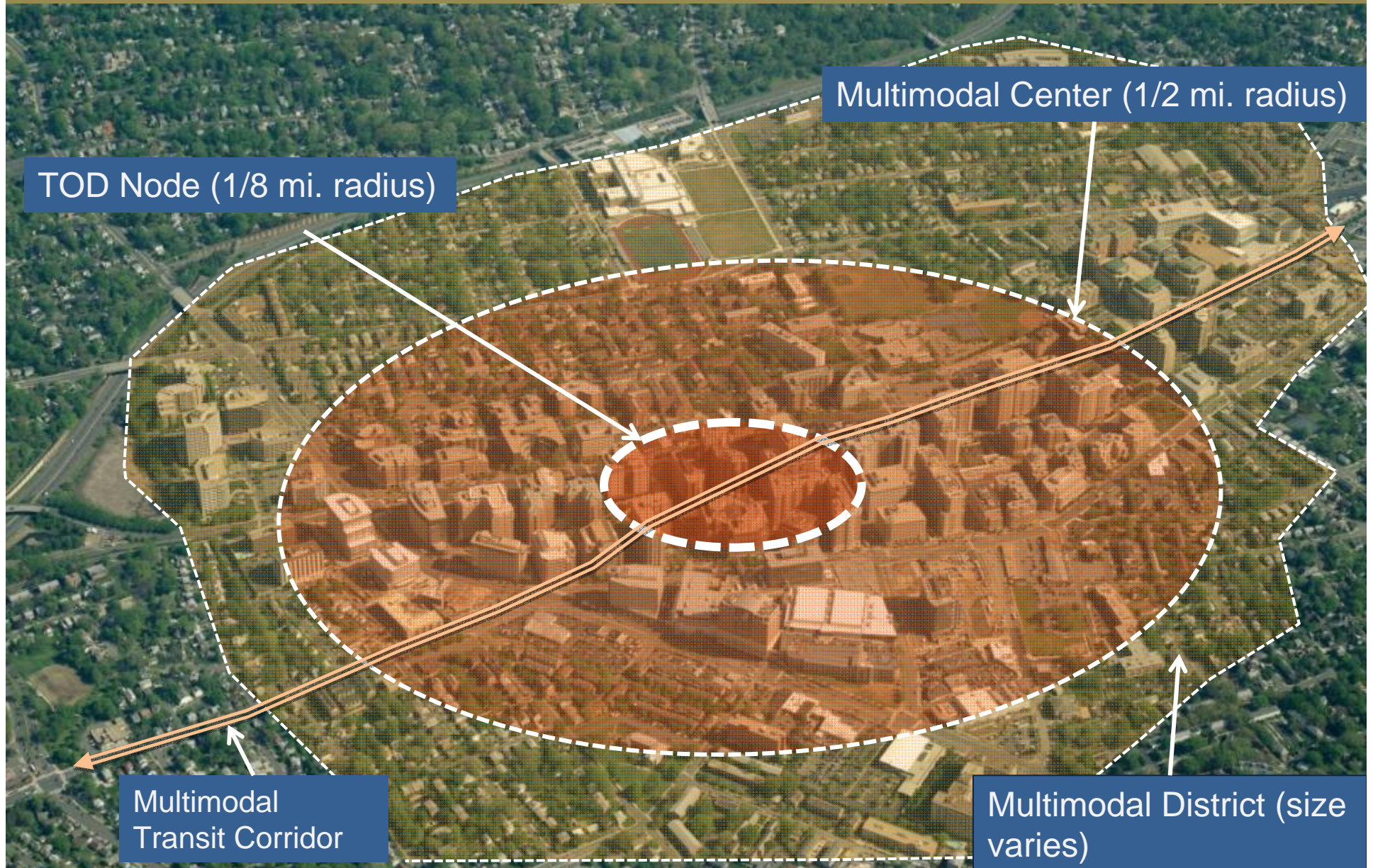
WHICH MULTIMODAL CENTERS HAVE TOD NODES?



RANGE OF MULTIMODAL CENTERS



MM DISTRICTS, CENTERS & TOD NODES



MULTIMODAL CENTERS ALONG A CORRIDOR



Green = Potential
Multimodal Districts

Red = TOD Nodes

Blue = Multimodal Centers

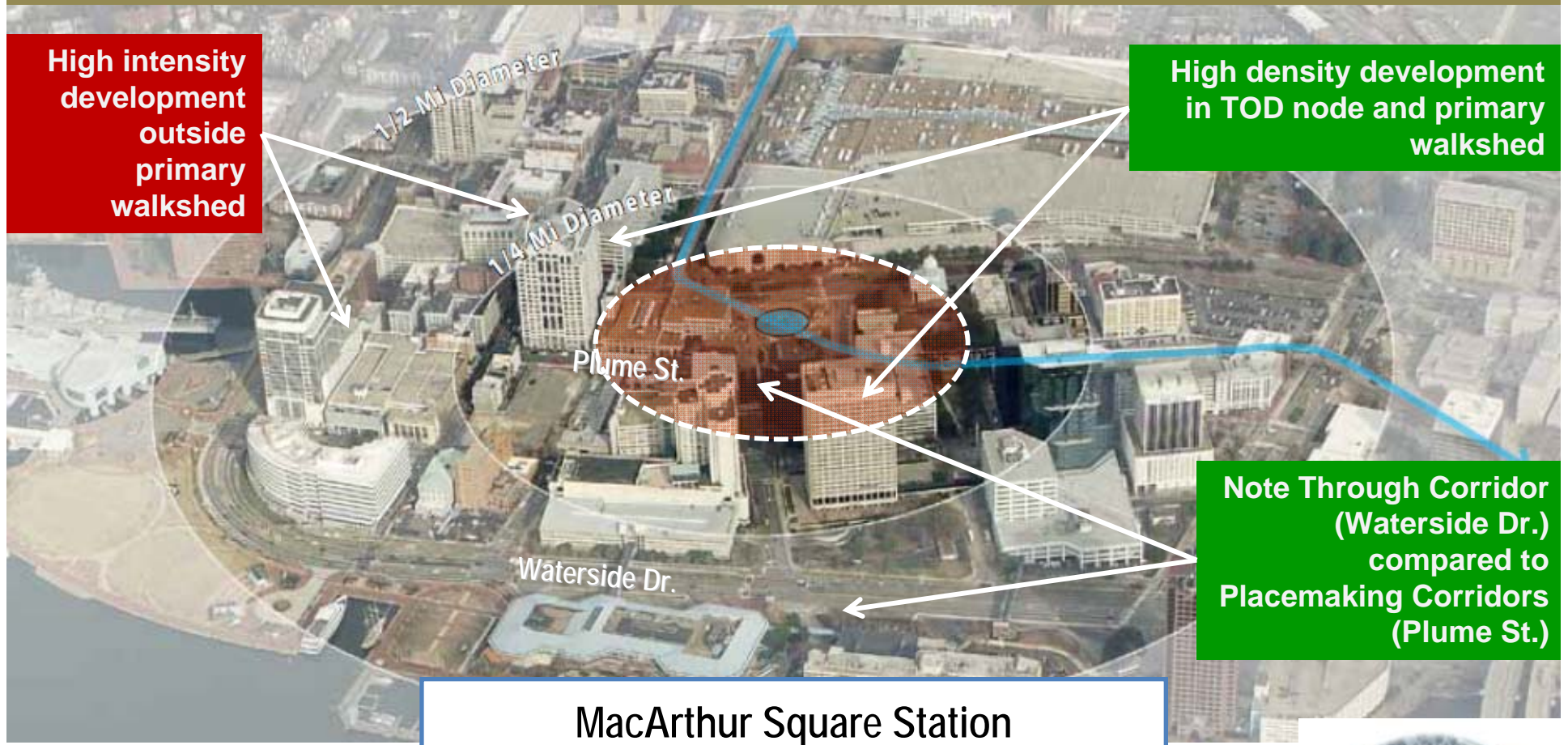
Height represents Activity Density of each
parcel in the corridor – note intensity of
Rosslyn to Ballston corridor

This is the Orange Line
corridor along Wilson Blvd
and Rt. 66 in Arlington and
Fairfax Counties

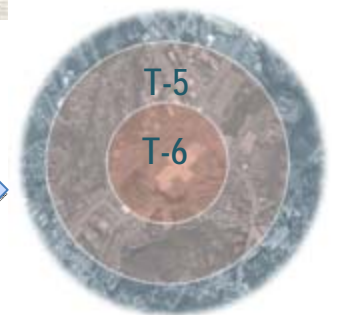
EXERCISE:

MULTIMODAL CENTERS ON THE TIDE

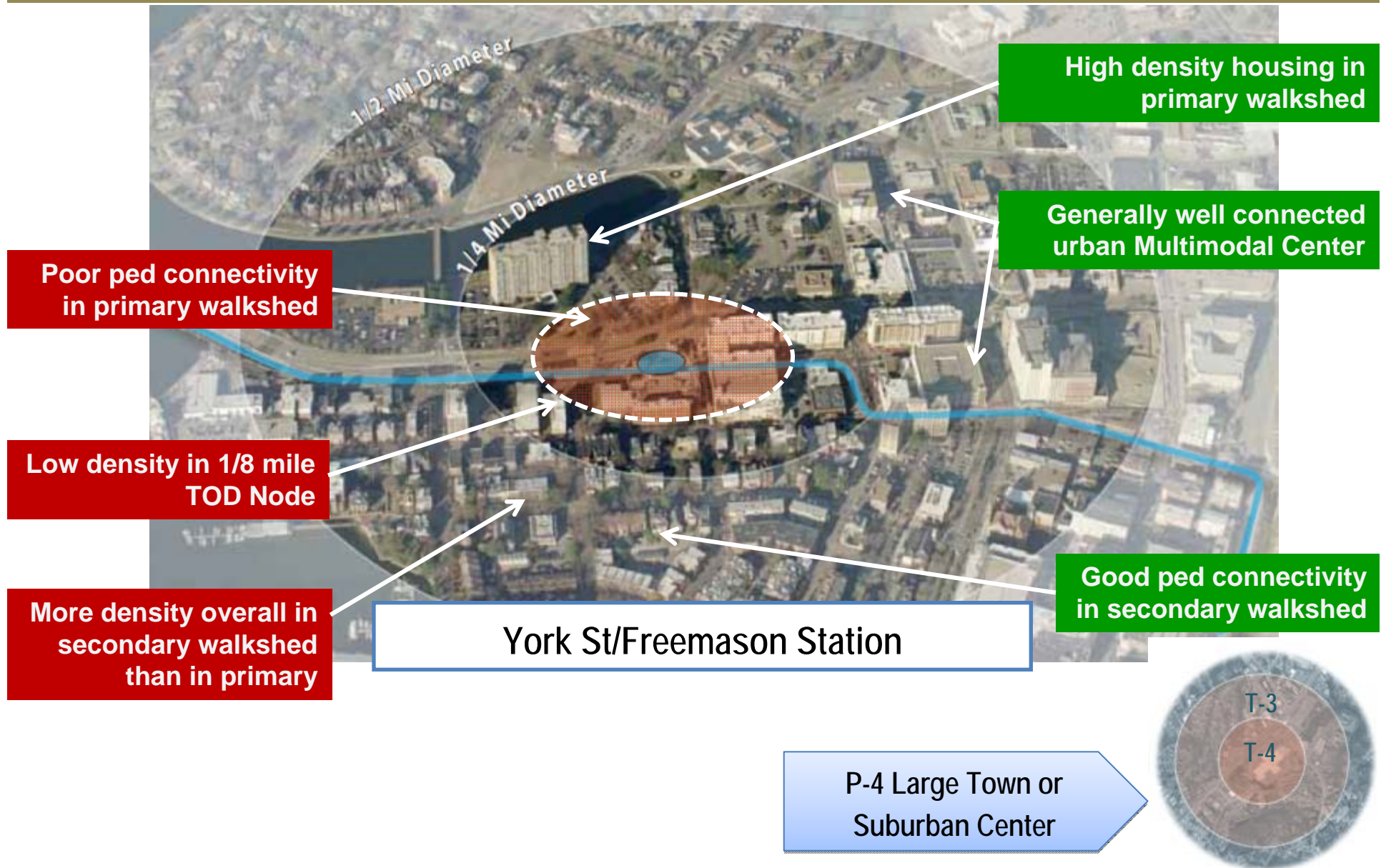
LOOKING AT TOD CENTERS



P-6 Urban Core








LOOKING AT TOD CENTERS

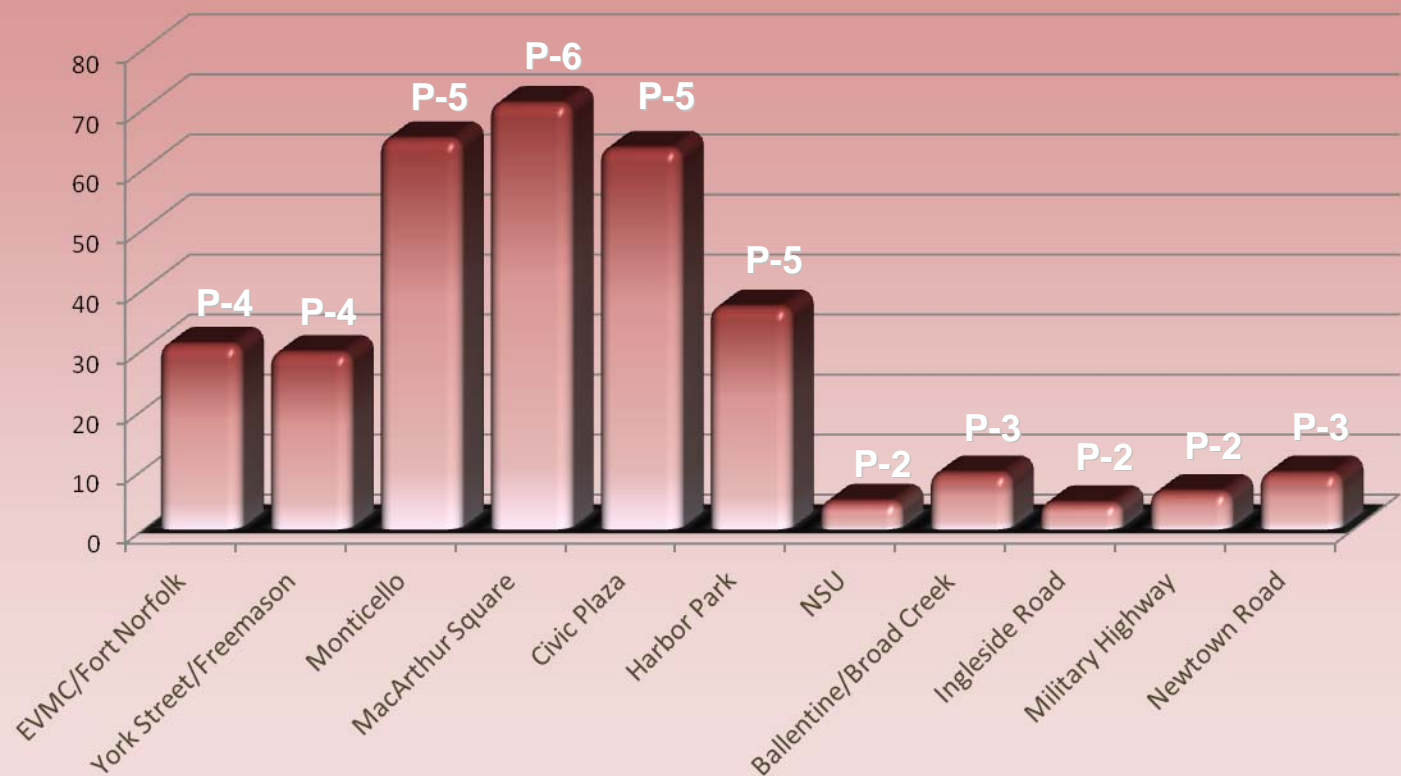


NORFOLK LIGHT RAIL MULTIMODAL CENTERS



TYPE OF CENTER	GROSS ACTIVITY DENSITY*
P6 Urban Core 	HIGH 70+ ↑
P5 Urban Center 	MODERATE/ HIGH 34-70
P4 Large Town or Suburban Center 	MODERATE 14-34
P3 Medium Town or Suburban Center 	MEDIUM/LOW 7-14
P2 Small Town or Suburban Center 	LOW 2-7 ↓

Multimodal Center Type by Activity Density




RIDING THE TIDE

- Look at the Station name on your name tag
- Ride the Tide to your station
- Time permitting – walk around and note pluses and minuses of multimodal center (see worksheet)



RIDING THE TIDE

- Review worksheets for station area
- Answer questions as you are able
- Try to identify the Center Types using Summary Sheets
- Meet back here at 12:20
- We will do a quick round robin report out of each station's pluses and minuses when we return



MACARTHUR SQUARE

RIDE STATISTICS

Activity Density: _____ activities per acre

Vehicle Accessibility: _____ road corridors miles
_____ transit routes (eg, bike)

Bike/Foot Accessibility: _____ proximity to destinations (walking, riding)

WINDSHIELD SURVEY: (glance over the back of the sheet for additional space)

How much pedestrian activity did you observe?

How accessible is the station from surrounding area - for pedestrians, bicycles, bus to BART?

How supportive is the surrounding development for transit?

Any suggestions for improvement short or long term?

SUMMARY

What center type (refer to your handbook) best describes this station area?

How does this center compare with our center prototype?

TYPE OF CENTER	HEIGHT 20+'	MODERATE/ HIGH 14-20'	MODERATE 10-14'	MODERATE/ HIGH 7-14'	LOW 3-7'
P6 Urban Core					
P5 Urban Center					
P4 Large Suburban Center					
P3 Medium Suburban Center					
P2 Small Suburban Center					

* Urban Activity Density table is provided per station
** Station P1 is not included in this document

LUNCH DISCUSSION

NORFOLK'S LIGHT RAIL SYSTEM AND TOD

AMANDA LUTKE
CITY OF NORFOLK

HOUSING AND MULTIMODAL TRANSPORTATION

J.D. BONDURANT
VIRGINIA HOUSING DEVELOPMENT AUTHORITY

WRAP UP

- Next Steps
 - Evolving corridors & regions over time
 - Drafting Guidelines Document
- Next Steering Committee Meeting
 - Tentative Dates/Location:
 - Central?– late June
- Project website www.drpt.virginia.gov
 - Click on 'transit' and 'transit planning' and other links 'Multimodal and Public Space Design Guidelines'

www.drpt.virginia.gov/activities/MultimodalandPublicSpaceDesignGuidelines.aspx